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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,377	01/14/2004	Hyun-Seok Seo	0630-1921P	2363

2292 7590 03/05/2007  
BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER
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CHAUDHRY, SAEED T

ART UNIT	PAPER NUMBER
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1746

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/05/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/05/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

## Office Action Summary

Application No.

10/756,377

Applicant(s)

SEO ET AL.

Examiner

Saeed T. Chaudhry

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/14/04; 4/25/05, 2/10/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

Art Unit: 1746

## **DETAILED ACTION**

Applicant's preliminary amendments and remarks filed January 14, 2004 have been acknowledged by the examiner and entered. Claims 1-20 are pending in this application for consideration.

### **Priority**

Receipt is acknowledged of papers submitted under 35 U.S.C. § 119, which papers have been placed of record in the file.

### **Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (c) he has abandoned the invention.
- (d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States.
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.
- (f) he did not himself invent the subject matter sought to be patented.
- (g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

**Claims 1-4 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakane.**

Sakane (5,335,524) discloses a method of washing in a drum washing machine, wherein laundry falls by a gravity through rotation of the drum in forward direction and in reverse direction.

The drum is rotated about its transverse axis alternately in forward and reverse directions in the wash step. With rotation of the drum, the clothes therein are scooped and raised by the inner peripheral wall surface of the drum and then caused to fall down. Such an agitating movement as described above is repeated.

The present invention provides a drum type washing machine comprising a drum mounted on a suitable support so as to be rotated about a transverse axis thereof, the drum accommodating clothes to be washed with liquid. Drive means is provided for rotating the drum in a wash step so that the clothes are agitated with the liquid in the drum. The drive means includes an electric motor. Rotational speed control means is provided for controlling the drive means so that the rotational speed of the drum is varied during rotation thereof in the wash step in a range including a rotational speed at which the clothes in the drum are caused to fall down from an inner peripheral surface of the drum against a centrifugal force. The rotational speed control means includes means for controlling either voltage applied to the motor or frequency thereof so that the rotational speed of the motor is varied. The rotational speed control means acts to very rapidly bring the rotational speed up to a first predetermined rotational speed in one direction, thereafter to gradually change the rotational speed to a second predetermined rotational speed in said one direction; and to thereafter reduce the rotational speed to zero; and to thereafter rapidly bring the rotational speed up to a third predetermined value which is in the opposite rotational direction; and thereafter to gradually change the

Art Unit: 1746

rotational speed to a fourth predetermined rotational speed which is in said opposite rotational direction.

In the drum type washing machine, the drum is rotated in the wash step in the rotational speed range including the rotational speed at which the clothes are caused to fall down from the inner peripheral wall surface of the drum. As a result, the clothes are raised by a rotational angle and then caused to fall down. Such a movement of the clothes as described above is repeated so that a washing action is obtained. Furthermore, since the falling loci of the clothes or agitating modes are not uniform but necessarily varied with variations of the rotational speed of the drum. Consequently, the clothes can be restrained from being entwined with one another since the agitating modes include the one that acts so that entwined clothes are disentangled.

The drive means may preferably comprise a brushless motor and the rotational speed control means may comprise voltage control means for or feedback controlling a duty ratio of a pulse voltage applied to the brushless motor so that the rotational speed of the motor is varied. Furthermore, it is preferable that the drive means comprise a brushless motor and the rotational speed control means comprise voltage control means for controlling a duty ratio of a pulse voltage applied to the brushless motor so that the rotational speed of the motor is varied, load volume detecting means for detecting the volume of the clothes accommodated in the drum, and rotational speed variation pattern control means for controlling the voltage control means so that the brushless motor is supplied with a pulse voltage with a duty ratio corresponding to the volume of the clothes detected by the load volume detecting means (see col. 1, line 37 through col. 2, line 41).

Art Unit: 1746

Sakane discloses to rotate the wash drum in forward direction and reverse direction.

Therefore, wash drum from stop position to start position has inherently exponent function in the duty ratio, since in the start of the motor the duty ratio exponentially increased.

### **Claim Rejections - 35 USC § 103**

**The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:**

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakane in view of Imamura et al.**

Sakane were discussed supra. However, the reference fails to use a heater for heating the washing water.

Imamura et al (5,870,905) disclose a method for heating the washing water in a drum type washing machine in order to increase the washing detergency (see col. , lines ).

It would have been obvious at the time applicant invented the claimed process to incorporate the cited steps of heating the washing water as disclosed by Imamura et al into the

Art Unit: 1746

process of Sakane to increase the washing detergency or turn off the heater while the detergency is not required.

**Claims 5, 12-14 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakane.**

Sakane were discussed supra. However, the reference fails to specify a user select modes.

It is conventional and well known in the art of washing machine to include user selection modes for override the machine auto selected modes such as soak, rinse only, wash and rinse. Therefore, it would have been obvious at the time applicant invented the claimed process to include the user selected modes in the washing method to increase the performance and effectiveness of the washing clothes. Further, it is known in the art to increase the temperature of the washing water to increase the washing effectiveness. Therefore, one of ordinary skill in the art would use a heater for heating the washing water when it is necessary to heat the washing water.

**Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakane in view of Erickson et al.**

Sakane was discussed supra. However, the reference fails to specify a lifter for ascending the laundry in the drum.

Erickson et al (5,890,247) disclose fins or blades 119 which are fixedly secured to washing basket 113.

It is well known in the art of washing laundry to have lifter or fins as disclosed by Erickson et al to lift the laundry in the wash drum. Therefore, it would have been obvious at the time applicant invented the claimed process to include lifter in the method of Sakane to increase the lifting capability of the washing drum and to increase the washing efficiency.

Art Unit: 1746

*Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saeed T. Chaudhry whose telephone number is (571) 272-1298. The examiner can normally be reached on Monday-Friday from 9:30 A.M. to 4:00 P.M.*

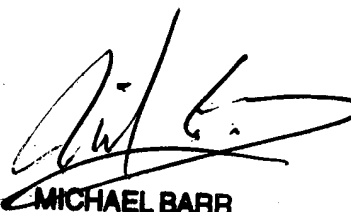
*If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael Barr, can be reached on (571)-272-1414. The fax phone number for non-final is (703)-872-9306.*

*When filing a FAX in Gp 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are for entry into the file of the application. This will expedite processing of your papers.*

*Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-1700.*

*Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).*

**Saeed T. Chaudhry**  
Patent Examiner



**MICHAEL BARR**  
SUPERVISORY PATENT EXAMINER